Helios Ventilatoren

MONTAGE- UND BETRIEBSVORSCHRIFT NR. 86267
INSTALLATION AND OPERATING INSTRUCTIONS NO. 86267
NOTICE DE MONTAGE ET D’UTILISATION N° 86267

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UK
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CE

Radialventilatoren - Centrifugal fans - Ventilateurs centrifuges

GigaBox

GBW.. T120

GBD.. T120

- für Fördermitteltemperaturen bis max. 120 °C
- for air flow temperatures up to 120 °C
- pour température du fluide jusqu’à max. 120°C

ENGLISH

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CHAPTER 1

INSTALLATION AND OPERATING INSTRUCTIONS

1.0 Important information

To ensure safety and correct operation please read and observe the following instructions carefully before proceeding. **The electrical connection must be fully isolated from the supply up to the final assembly!** Keep the installation and operating instructions as a reference at the device. After the final assembly the document must be handed out to the operator (tenant/owner).

1.1 Warning and safety instructions

Accompanying symbol is a safety-relevant prominent warning label. All safety regulations and/or symbols must be absolutely adhered to, so that any danger situation is avoided.

1.2 Warranty – Exclusion of liability

If the preceding instructions are not observed all warranty claims and accommodation treatment are excluded. This also applies to any liability claims extended to the manufacturer.
The use of accessories not offered or recommended by Helios is not permitted. Potential damages are not liable for warranty.

1.3 Certificates

If the product is installed correctly and used to its intended purpose, it conforms to all applicable European Standards at its date of manufacture.

1.4 Receipt

Please check delivery immediately on receipt for accuracy and damage. If damaged, please notify carrier immediately. In case of delayed notification, any possible claim may be void.

1.5 Storage

When storing for a prolonged time the following steps are to be taken to avoid damaging influences: Protection of motor by dry, air- dustproof packing (plastic bags with drying agent and moisture indicators). The storage place must be water proof, vibration-free and free of temperature variations.
When storing for several years or non-rotation of motor an inspection of the bearings with possible relubrication and an electrical inspection to VDE 0701 and VDE 0530 are absolutely necessary before starting operation. When transhipping (especially over longer distances) check if the packing is adequate for method and manner of transportation.
Damages due to improper transportation, storage or putting into operation are not liable for warranty.

1.6 Einsatzbereich

The GigaBox **GB.. T120** are designed for moving polluted, humid and hot air volumes up to max. 120° C. The motor is located outside the main air flow. The units find primarily their application in commercial kitchens and in the process technology. By changing the side panels, a variable discharge direction and an optimal adaptation to structural conditions is achieved.
For operation under difficult conditions further inquiry and operation release is necessary as the standard execution might not be suitable. Outdoor use is possible with outdoor cover hood and external weather louvre (one or two-sided, accessories). A drilling for the rain drainage (accessories) is prepared. The insulation class, the IP rating and the maximum air flow temperature (at normal operation -TR and using speed regulation) are given on the fan name plate. The fan is limited for continuous operation S1 and frequent switching operations are not allowed. The fan may only be used for its intended purpose.

WARNING

Use and operation only according to this installation and operating instructions. Using the fan to move heavily polluted air or in potential hazardous areas is not allowed!
The fan may only be used for its intended purpose.

1.7 Operation as room ventilation device

In order to achieve the desired fan performance (ambient temperatures of –40° to +40°C) a systematic air supply is essential.

1.8 Performance data

The unit must be installed correctly to achieve the optimum performance. This applies to the installation of the unit, the ducting and the replacement air supply.

- Electrical parameters

The motor rating plate provides information on the electrical data. These data are to be examined for its conformity to the local conditions.

- Acoustics

The Gigabox casing is acoustically insulated. Adverse operating conditions etc. can lead to an increase of the given data.

1.9 Impellers

The GigaBox fans have backwards curved centrifugal impellers made from aluminium with galvanised steel support plates. The impeller and the motor as one unity are dynamically balanced to quality standard G 6.3 or 2.5 – DIN ISO 1940 T.1.

1.10 Sound level

The sound levels stated in the catalogue can differ considerably after installation as the sound pressure level depends on the absorption capacity of the room, the place of installation and other factors. Sound reduction is possible by using sound attenuators and by speed regulation.

NOTE ☞

1.11 Safety

- A certified electrician may only carry out all servicing and installations.
- The fans may be operated only with the rated voltage indicated on the type plate.
- Technical data on type plate are to be adhered to without fail.
- The degree of protection given on the type plate is only valid with designed installation in accordance with these installation and operating instructions and with closed aggregate.

WARNING ⚠

1.12 Electrical connection

All work must be carried out with the equipment fully isolated from the power supply. The electrical connection is to be carried out in accordance with the relevant wiring diagram and is only to be done by a certified electrician. The electrical connection must be fully isolated from the supply up to the final assembly!

All relevant safety regulation, national standards and norms are to be adhered to. An appliance is required for cut off from the supply with a minimum of 3 mm contact opening of each pole. The rated voltage and frequency must correspond with the data on the type plate. The standard terminal box is located on the motor support plate.

NOTE ☞

1.13 Protection against accidental contact

When installing observe the valid regulations for labour protection and accident prevention. Any contact with rotating parts must be avoided. Make sure that no textiles (such as curtains) or other materials, which could be sucked in, as for instance clothing, are close to the suction area of the fan.

Depending on the installation conditions a contact safety device on the discharge side may be necessary.

Corresponding grilles are available as accessories. Fans protected by their installation in ventilation channels or closed aggregates do not need a protection grille, if the installation guarantees the protection (see DIN 31001 and 24167). We emphasize that the installer will be held responsible for accidents occurring as a result of missing protection devices.

1.14 Air flow direction and direction of rotation

The Gigabox T120 model ranges have a fixed direction of rotation, i.e. they are not reversible. An arrow on the units indicates the direction. Correct rotation must be ensured when running the fan. Incorrect direction of rotation leads to lower air volumes, increased noise levels and a higher electrical current, which will harm the motor.

NOTE ☞

The fan should be installed in such a way to ensure desired air flow direction in the system.

The air flow direction of the fans can be determined by appropriate installation (see operation/use above). The discharge is possible in any direction by changing the discharge adapter and side panels to suit to desired result. Therefore most desired discharge options are available.

1.15 Speed control

All units (except GB 630/4 T120) are speed controllable via a 5-step transformer controller (accessories). The 3 phase units can also be operated via star-delta connection giving 2 speed steps (accessories - 2 speed switch DS 2 or motor protection unit M 4).

3-phase units are controllable with Helios frequency inverters (accessories). For safe operation a sinus filter on all phases must be installed between motor and inverter. When speed controlled, the maximum air flow temperature stated for speed-controlled fans (TR) must not be exceeded. The suitable performance curves and controllers can be found on the equivalent catalogue page(s).

WARNING ⚠

The use of the other brands, especially other electronic devices, can lead to malfunctioning and even failure of controller and/or fan. Controllers, which have not been cleared by Helios, are not liable for warranty and guarantee claims.

1.16 Motor protection

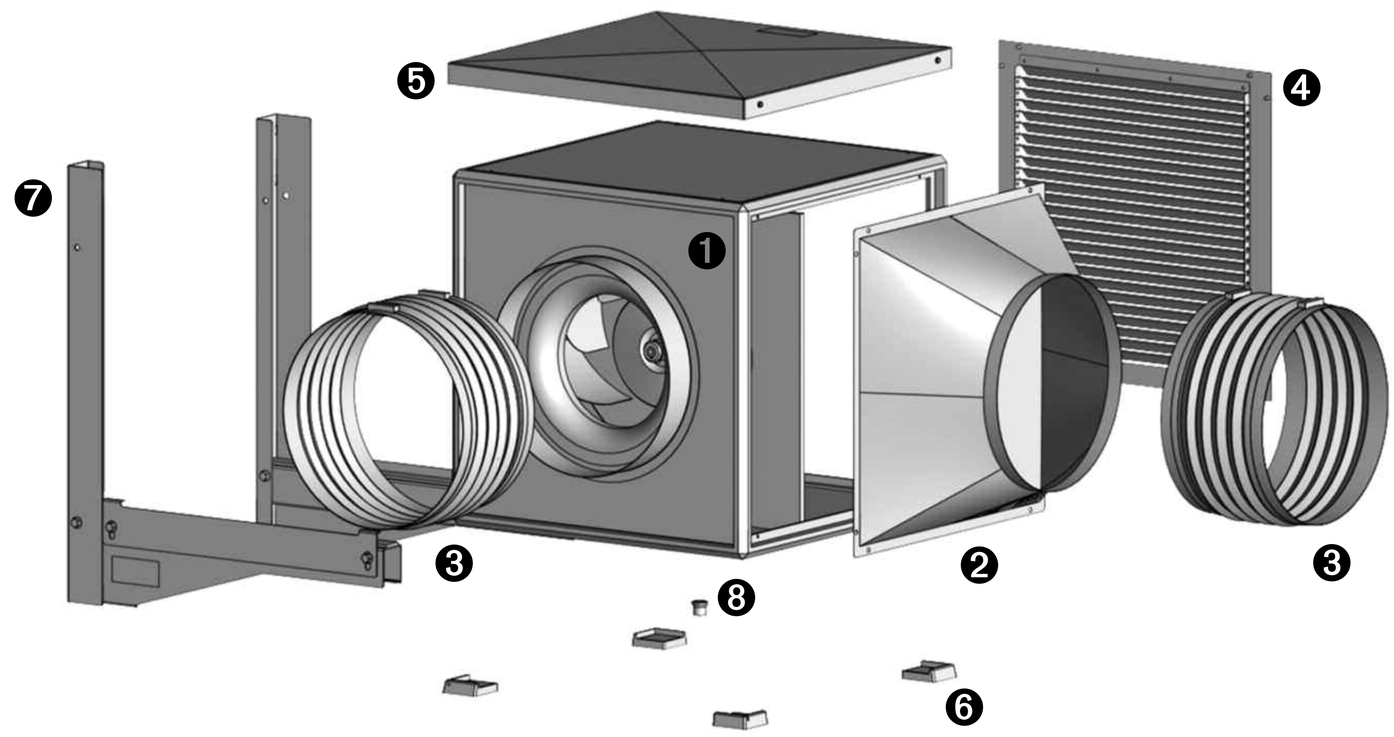
All Gigabox T120 units are equipped with maintenance-free motors with build-in thermal contacts, suitable for continuous operation S1, insulation class F. All units should be connected to a suitable motor protection device (accessories, see catalogue). Only through this an approved motor protection is achieved.

CHAPTER 2

SCOPE OF DELIVERY AND ACCESSORIES

2.0 Scope of delivery

fig.1



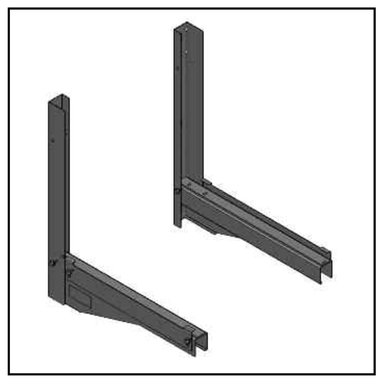
Standard parts:

❶ GigaBox GB.. T120, including condensate collector and condensation spigot
❷ Discharge adapter, from square into circular ducted system, included in delivery
❸ Flexible sleeve **GB-FM..** (included in delivery)

Accessories:

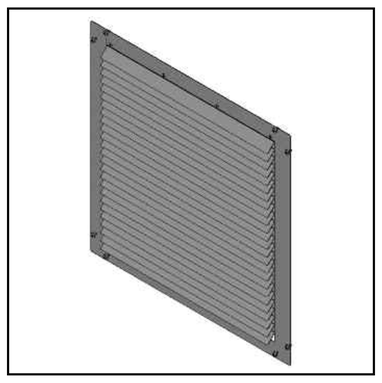
❹ External weather louvres **GB-WSG..** (accessories)
❺ Outdoor cover hood **GB-WSD..** (accessories)
❻ Anti vibration mounts for compression **SDD-U** (accessories)
❼ Wall bracket **GB-WK..** (accessories)
❽ Rain drainage **GB-RA..** (accessories)

2.1 Accessories



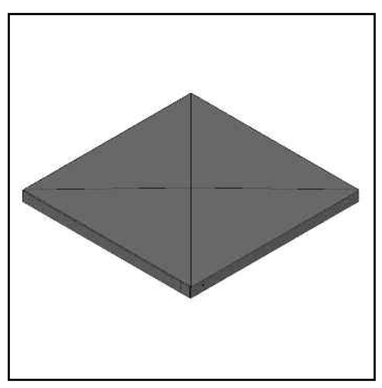
GB-WK..
Wall bracket
for wall installation

Ref.no.
see catalogue



GB-WSG..
External weather louvres
for discharge side

Ref.no.
see catalogue



GB-WSD..
Outdoor cover hood
for protected installation outdoors

Ref.no.
see catalogue

SDD-U
Anti vibration mounts for compression
for vibration-free installation indoors
(set of 4)

Ref.no. 5627

GB-RA
Rain drainage
for installation outdoors
(Drilling in bottom of the casing already provided)

Ref.no. 9418

NOTE ☞

The suitable controllers and motor protection units for the T120 model ranges can be found on the equivalent GigaBox catalogue page(s).

CHAPTER 3

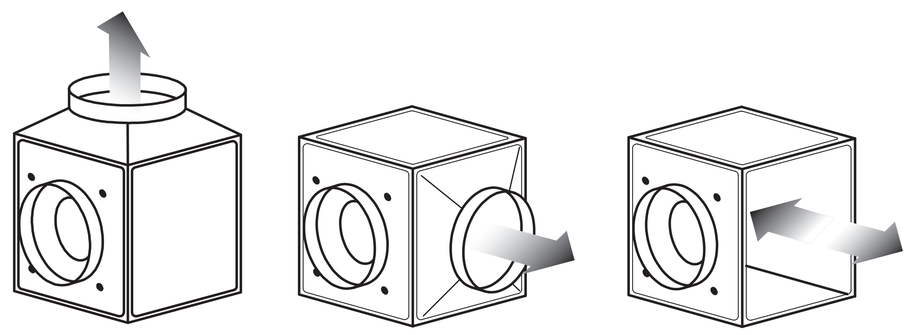
ASSEMBLY/INSTALLATION

3.0 – Assembly

The GigaBox T120 model range allows a flexible assembly by three possible centrifugal discharge directions of the discharge adapter (see Fig.2).

Please pay attention to a secure, durable mounting of the unit as well as a free access to the terminal box and the motor impeller unity on the rear of the unit. Easy positioning is made using integrated crane hooks. Removable panels allow an easy inspection access.

fig.2



To prevent vibration transmission to buildings and ducting systems use flexible connections (included in delivery) between fan box and connecting ducting.

IMPORTANT NOTE ☞

- To achieve the given sound and power data, it is necessary when connecting the fan box to a ducting system to have at least twice the duct diameter of straight ducting before and after the fan box. Otherwise there may be a loss of performance and higher sound levels.
- The GigaBox must be assembled so that service and maintenance can be performed easily and safely (back side of the motor).
- The installation must be carried out with condensation drainage showing downward!
- The cleaning is carried out via the lateral inspection access (see Fig.4).

- Condensate formation

Condensate formation in the unit is nearly impossible by double-skinned thermal insulated panels. Nevertheless, on condensate formation must be calculated with very humid media or steam-containing air. Condensate forms, above all, in not isolated ducts, which can run, then into the fan.

3.1 Installation

The fans are delivered in series as a complete unity, i.e. ready to install. With a raised installation position (not at ground level) the unit must be well secured to prevent any movement. Here the wall brackets **GB-WK..** (accessoies) is to be used. For protected installation outdoors, the outdoor cover hood **GB-WSD..** (accessories) and the rain drainage **GB-RA** (accessories) must be mounted. With installation on a level surface put anti vibration mounts **SDD-U** (accessories) under each corner between casing and surface to avoid vibration transmission.
Pay attention to the correct arrangement on the assembly of the discharge adapter (see Fig. 3).

fig.3

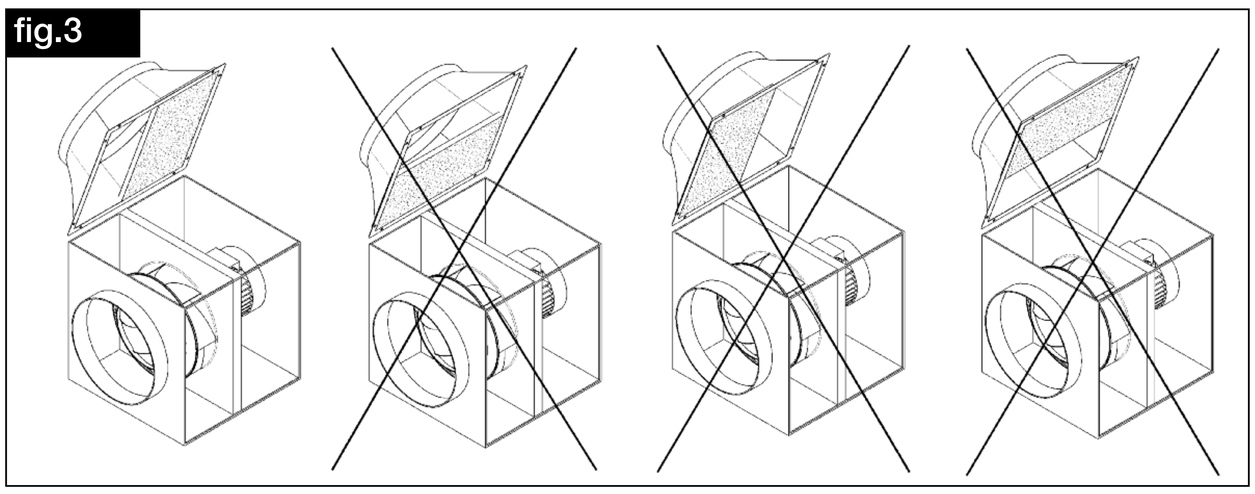


fig.4

3.2 Dismantling

The complete motor impeller unity is without disassembly of the remaining unit components to the rear side removable.

WARNING ⚠

3.3 Electrical connection

The following checks are to be carried out:
- Check for operation according to the intended purpose of the fan
- All work must be carried out with the equipment fully isolated from the power supply.
The electrical connection is to be carried out in accordance with the relevant wiring diagram and is only to be done by a certified electrician.
All relevant safety regulation, national standards and norms are to be adhered to.

CHAPTER 4

CLEANING AND MAINTENANCE

4.0 Cleaning and Maintenance

The cover with handle of the inspection access is simply removable for the cleaning and maintenance (see Fig. 4).
- Make sure before the cleaning that the unit is isolated from the mains and is secured against restarting with an isolator switch!
- Clean unit only with a damp cloth.
- Excessive deposit of dirt, dust, grease and other materials on the impeller, motor and between casing and impeller is to be avoided and has to be prevented by periodical cleansing.
- For maintenance purposes inspection doors and access openings must be provided in the duct system in a suitable place.
- The motors have maintenance-free, long lasting, greased ball bearings.

CHAPTER 5

FAULT DIAGNOSTICS

5.0 Indications – Disturbance origins

Triggering of motor overheat protection (TK) can indicate
- wrong direction of rotation (I ~ 2x I_n)
- built up of dirt, hard running impeller and/or ball bearing failure
- too high air flow temperature

Abnormal noises can mean
- wrong direction of rotation
- worn out ball bearings
- bad vibration isolation to other buildings and ducting systems

Vibration can originate from
- unbalanced or dirty impellers
- insufficient vibration isolation from buildings and ducting systems

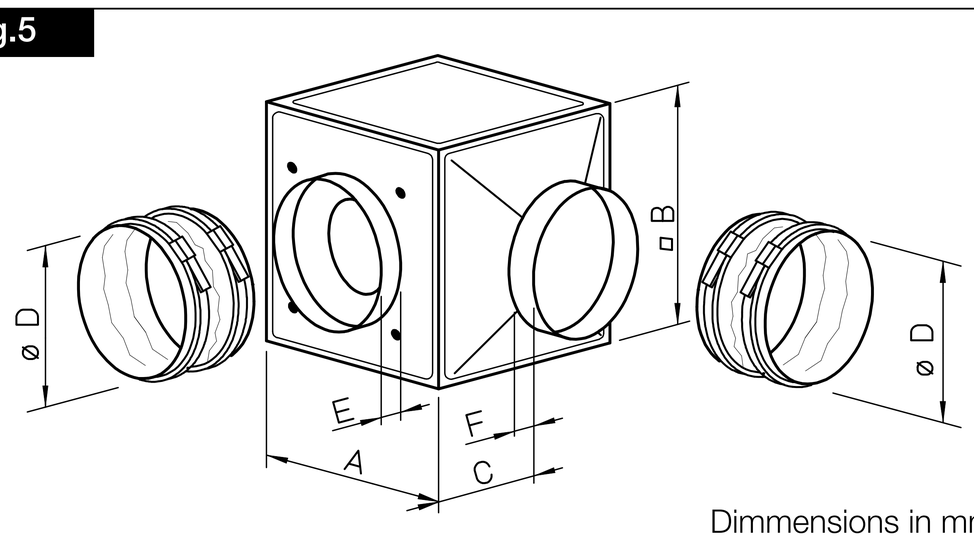
Extreme reductions in performance can occur
- with wrong direction of rotation
- if resistance to air stream through ducting and accessories (grilles, shutters, filters etc.) is higher than designed

CHAPTER 6

TYPES / DIMENSIONS
for GB.. T120

Type	A	□ B	C	Ø D	E	F
GBW 355/4 T120	500	500	150	355	30	30
GBD 355/4/4 T120	500	500	150	355	30	30
GBW 400/4.. T120	670	670	250	400	30	30
GBD 400/4/4 T120	670	670	250	400	30	30
GBW 450/4.. T120	670	670	250	450	30	30
GBD 450/4/4 T120	670	670	250	450	30	30
GBW 500/4 T120	670	670	250	500	30	30
GBD 500/4/4 T120	670	670	250	500	30	30
GBD 560/4/4 T120	800	800	250	560	30	30
GBD 630/4 T120	800	800	250	630	30	30

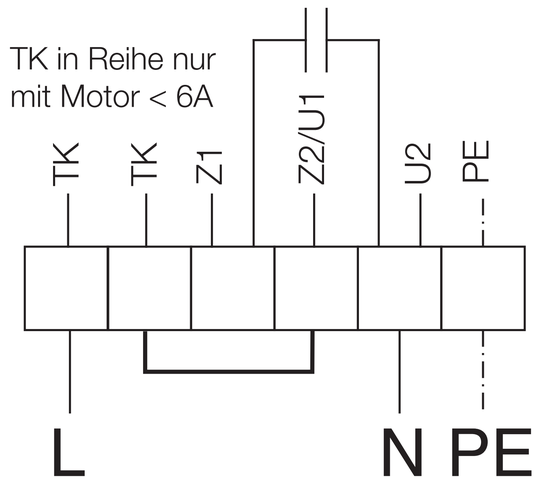
fig.5



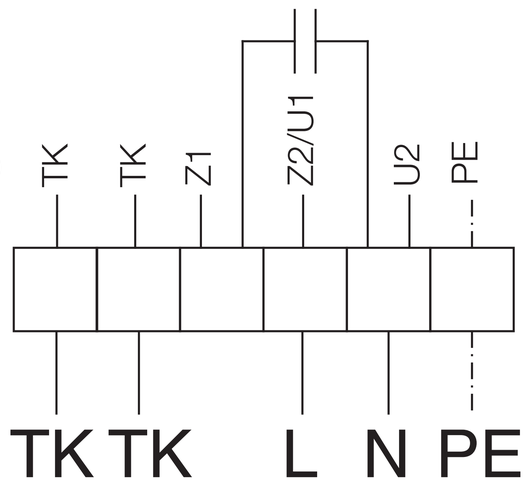
Dimmensions in mm

WIRING DIAGRAMM-OVERVIEW
for GB.. T120

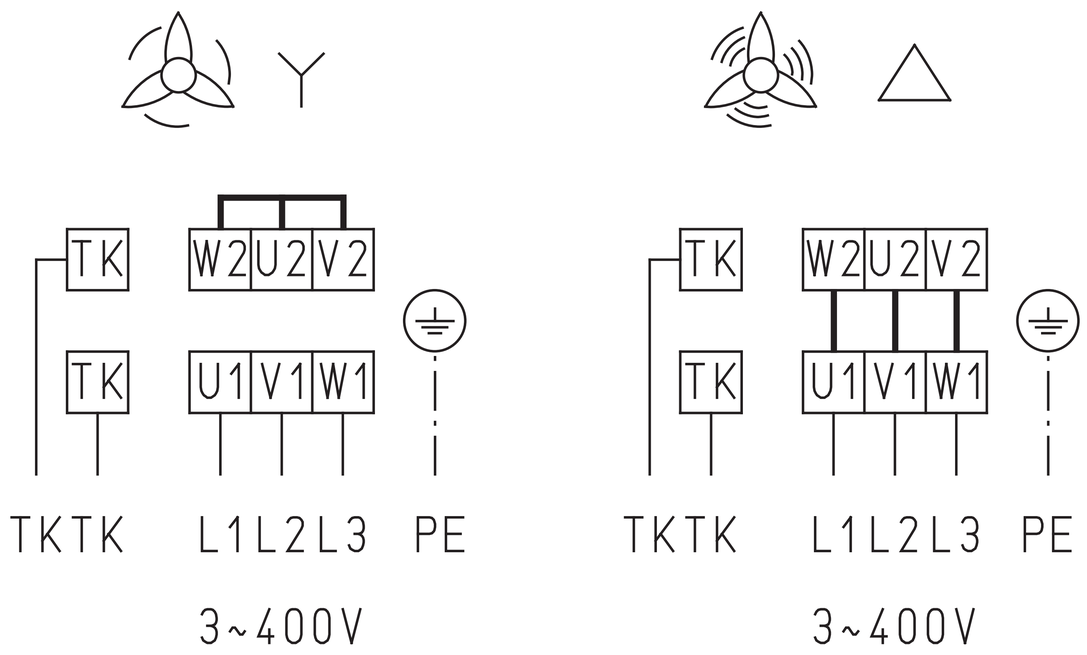
SS-935
GBW.. T120
alternating
current,
1~ 230 V



U1-braun (BN)
U2-blau (BU)
Z1-schwarz (BK)
Z2-orange (OG)
TK-weiß (WH)
PE-gelb/grün (YE/GN)



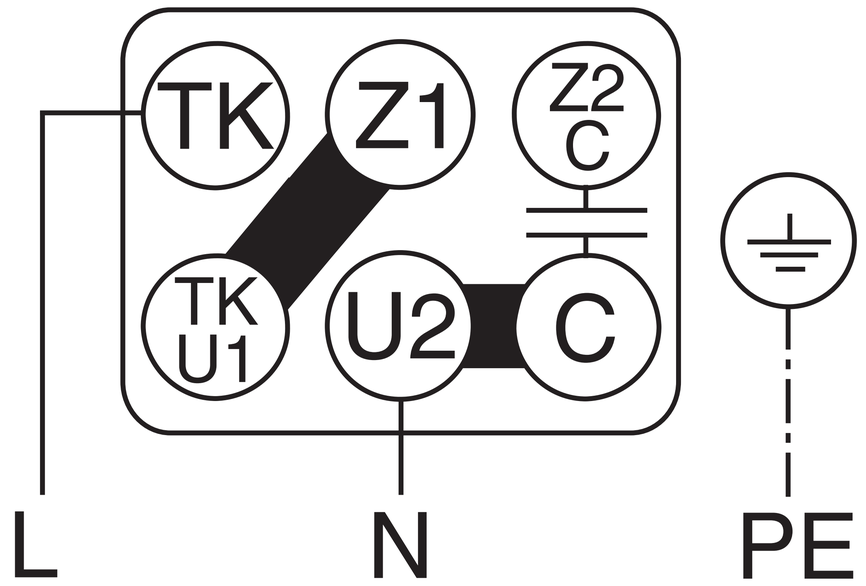
SS-520
GBD 560/4/4 T120
rotary current,
3~ 400 V



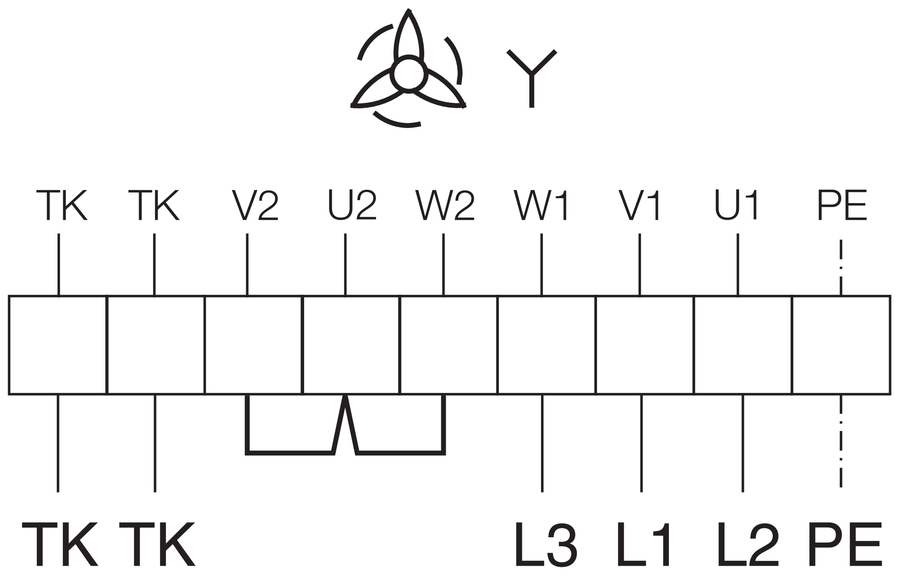
UK

WIRING DIAGRAMM-OVERVIEW
for GB.. T120

SS-301
GBW 500/4 T120
alternating current,
1~ 230 V

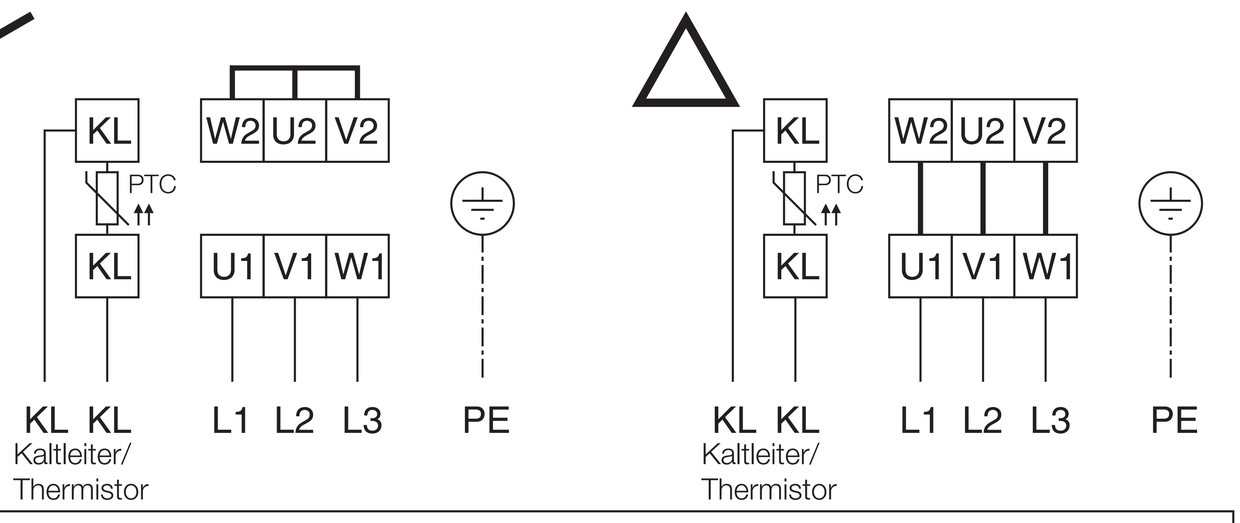


SS-947
GBD.. 4/4 T120
rotary current,
3~ 400 V



85115 001 SS-947 27.07.09

SS-776
GBD 630/4 T120
rotary current,
3~ 400 V



400 V	/	230 V
690 V	/	400 V